MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2017/2018

BAE2014 – SEMINAR IN ANALYTICAL ECONOMICS
(All Sections/Groups)

12 MARCH 2018
9.00 a.m. – 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of **FIVE** pages with **FOUR** questions only.

2. Attempt **ALL FOUR** questions. The distribution of the marks for each question is given.

3. Please write all your answer in the Answer Booklet provided.

Answer all questions in the answer booklet provided.

Question One (25 marks)

Passage 1

One of the implications of the rational expectation-permanent income hypothesis (RE-PIH, hereafter) is that consumption and disposable income are cointegrated. Campbell (1987), using tests that are developed in Engle and Granger (1987), concludes that this implication holds on the quarterly aggregate data of the U.S. He finds that although a Phillips-Perron test could not reject the nonstationarity of the disposable income and consumption processes, an augmented Dickey-Fuller test rejects the existence of a unit root in the residuals obtained from the least square regression of disposable income on consumption. Campbell and Clarida (1988) confirm those conclusions with the quarterly aggregate time series data of Canada.

These tests, however, may yield different conclusions if they are applied to data from other countries. This is because the unit root tests in the literature have rather weak power when they are applied to individual time series of moderate length, particularly when the alternative is close to the null. Indeed, Attfield, Demery and Duck (1990), using quarterly aggregate time series data of the U.K., find that Phillips-Perron test strongly rejects (at even the 10% level) against a unit root in the residuals of the regression between disposable income and consumption with augmented Dickey-Fuller tests of 1 or 4 lags. Campbell and Clarida (1988) indicate that, for the U.K., the unit root hypothesis for the disposable income is rejected at the 5% level, and the hypothesis of no cointegration between consumption and disposable income can only be rejected at the 10% level.

The conflicting results documented in this literature reveal that empirical findings of nonstationarity of both consumption and disposable income, as well as cointegration between them, may simply due to the weak power of the unit root tests that they are based upon. In this paper I use the national accounts data from twelve Organization for Economic Co-operation and Development (OECD) countries to test the nonstationarity of consumption and disposable income as well as the cointegration of them that is implied by the RE-PIH. The econometric method used in this paper is based on the theory of testing unit roots with panel data developed by Levin and Lin (1992). The advantage of using panel data is that a substantial gain in the power of the test can be obtained, even with a moderate number of cross sections and time series observations.

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The findings of this paper confirm that consumption and disposable income are cointegrated. They also provide comparisons between the conclusions obtained using only individual time series data and those obtained using pooled data of time series and cross sections. Specifically, I find that residual based cointegration tests cannot reject the hypothesis that consumption and income are not cointegrated when performed on individual time series data of each country. Nevertheless, when the data are pooled as a panel with time series data and cross sections, the evidence strongly rejects the hypothesis of no cointegration between consumption and disposable income.

Source: Jin, F. (1995). The title of this article is not provided due to the nature of the exam question. Southern Economic Journal, 62(1), 77-88.

Based on **Passage 1**, answer the following questions.

(a) Suggest a suitable title for **Passage 1**. The title should convey the main findings of the research and should be specific, concise, complete, and able to attract reader's attention.   (5 marks)

(b) What is the research problem that the author addressed in **Passage 1**?   (8 marks)

(c) Suggest research objective that is most likely studied by the author.   (4 marks)

(d) Discuss how you can extend Jin's (1995) empirical analysis on an issue related to consumption.   (8 marks)

Question Two (25 marks)

(a) Making sense of published research is part of the process of conducting research. Discuss **five** questions to ask when you review past research literatures.   (15 marks)

(b) Academicians who wish to publish their research have to follow a systematic analytical path. Describe the steps involved in an econometric analysis of economic models.   (10 marks)

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Question Three (25 marks)

Refer to the summary results and answer the following questions.

Table 1: Error correction model

$$\Delta(M2-p)_t = \underset{(0.0034)[3.91]}{0.0133} + \underset{(0.0652)[2.98]}{0.1941\Delta(M2-p)_{t-1}} + \underset{(0.0647)[1.83]}{0.1183\Delta(M2-p)_{t-2}} + \underset{(0.0639)[3.13]}{0.1998\Delta(M2-p)_{t-4}}$$

$$+ \underset{(0.0669)[1.52]}{0.10200\Delta y_t} - \underset{(0.0768)[-2.32]}{0.17811\Delta y_{t-1}} + \underset{(0.0734)[2.55]}{0.18733\Delta y_{t-3}} + \underset{(0.0019)[1.74]}{0.00333\Delta(ir-ir^*)_{t-3}} - \underset{(0.0011)[-2.36]}{0.00266\Delta \pi_t}$$

$$- \underset{(0.0011)[-2.55]}{0.00288\Delta \pi_{t-1}} + \underset{(0.0317)[2.02]}{0.0641\Delta w_{t-1}} - \underset{(0.0342)[-0.38]}{0.01290\Delta w_{t-4}} + \underset{(0.0179)[9.36]}{0.16757 d_{19984}} - \underset{(0.0255)[-5.67]}{0.1446 ECT_{t-1}}$$

AR(5)	0.8100 [0.5456]	RESET	0.5710 [0.5670]
ARCH (4)	0.8009 [0.5275]	CUSUM	Stable
Norm (2)	2.2858 [0.3189]	CUSUM-SQ	Stable
HET	0.7734 [0.7578]		

Notes:

1. $(M2-p)$ refers to the real money balance, p is the price index, y is the scale variable for real income. The $ir-ir^*$ is the interest rate differential. The opportunity cost of holding money is proxied by the inflation (π), w is real wealth, and ECT is the error correction term at time $t=1,\ldots, T$.

2. Values in parentheses and square brackets denote the standard errors and t-statistics, respectively, while values in square brackets for diagnostic checking section are the probability for each test.

3. AR(n) is the nth order LM test for autocorrelation; ARCH (m) is mth order test for autoregressive conditional heteroskedasticity; Norm (2) is the normality test; HET is the white heteroskedasticity test, and RESET is Ramsey Regression Equation Specification Error Test. CUSUM and CUSUM-SQ are for stability.

Source: Baharumshah, A.Z. and Soon, S.-V. (2015, Table 2) Demand for Broad Money in Singapore: Does Wealth Matter? Journal of Economics and Finance, 39(3), 557-573.

(a) What can you conclude by analysing all the results presented in **Table 1** of the Error Correction Model?   (16 marks)

(b) Based on **Table 1**, can you conclude that this is a good model? Justify your answer.   (9 marks)

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Question Four (25 marks)

Passage 2

Budget 2018, 28 Oct 2017 - THE federal government debt as a percentage of the gross domestic product (GDP) will be shaved by more than 2% next year.

According to the report, the ratio of the total federal government debt to the GDP will be down to 50.9% in 2018 compared to 52.7% this year.

The latest debt to GDP ratio of 50.9% as of end-June 2017 is well within the internationally accepted threshold of 55%.

The ratio of the total debt carried by the government to the GDP is also down for the year 2016 compared to 2015. According to the report, the ratio of total federal government debt to GDP is down to 73.3% for 2016 compared to 75.1% in 2015.

The bulk of the federal government debts are papers in the form of Malaysian Government Securities (MGS) and Malaysian Government Investment Issues. The average MGS yields on a five-year paper and 10-year paper were 3.684% and 4.052% respectively. The yields have gone up in tandem with the rise in rates in the US.

Domestic investors such as the pension fund, provident fund and Bank Negara hold the bulk of the debts while foreigners only hold 27.6% of the debt papers as at end June 2017. The papers held by foreigners, amounting to RM188.8bil are mainly long term in nature with tenures of about seven years.

The share of foreigners holding debts have come down from 32.4% as at end 2016 due to the US Federal Reserve's normalisation of its monetary policy where it started to increase interest rates.

On NFPCs, the total debt held by these entities stood at RM204bil as at end 2016, an increase compared to the RM199.5bil as at end 2015.

However as a percentage of the GDP, the debt held by the NFPCs is down to 16.6% compared to 17.2% in 2015.

The government's total debt servicing charges is expected to come up to RM28.9bil this year, which is 13.1% of the operating expenditure. Last year, the debt service charges were RM26.5bil and it was 12.6% of the operating expenditure.

The threshold for the debt service charges as a percentage of the operating expenditure is 15%.

Source: The title of this article is not provided due to the nature of the exam question. Retrieved from https://www.thestar.com.my/business/business-news/2017/10/28/govt-debt-to-gdp-ratio-to-be-2-lower-next-year/#Pv2KpxeuJwKCIqIg.99.

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Based on **Passage 2**, assume that you would like to conduct a research for the case of Malaysia. Your research will be entitled *"The Impact of Total Debt on the Economic Growth"*.

(a) Suggest <u>two</u> variables that will be used in the study.   (4 marks)

(b) What are the data that can be used to proxy the variables you suggested in (a)?
                        (4 marks)

(c) Explain your search strategy for finding your data.   (8 marks)

(d) Based on the title suggested above, describe the econometrics analysis that you will employ to conduct the study.   (9 marks)

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